REMARKS

Claims 1-27 are pending in the application with all claims rejected in view of the prior art.

Claims 9 and 19 has been amended. Claim 19 has been amended to clarify that the threshold region does not include a zero value, with support shown for example in FIG. 9 of the application. This differs from the situation in Tanaka where positive and mirrored negative threshold value is set and the gray level difference compared against these mirrored values.

Claims 9, 10, 13, 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuwabara (U.S. Patent No. 6,980,686 B2).

Claims 1, 2, 5-10, 13-21 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara (U.S. Patent No. 6,980,686 B2) in view of newly uncovered prior art Tanaka et al. (U.S. Patent No. 7,116,816 B2).

Claims 3, 4, 11, 12, 22 and 23 are rejected under 35 U.S.C. 103(a) on two grounds: under a combination of Kuwabara in view of Spaeth (U.S. Patent No. 2,349,012), and under a combination of Kuwabara, Tanaka, and Spaeth. The first rejection is in error because Kuwabara does not teach the use of a threshold region, and Spaeth does not make up for this deficiency.

Claim 14 is rejected under 35 U.S.C. 103(a) in view of the combination of Kuwabara and Lin et al. (US Patent No. 6,091,846). Because Kuwabara does not teach the use of a threshold region, and because Lin does not make up for this deficiency, rejection is improper.

The Examiner is respectfully requested to reconsider the rejections and pass the claims on to allowance in view of the remarks below.

Claim Rejections – 35 U.S.C. § 102

Claims 9, 10, 13, 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuwabara (U.S. Patent No. 6,980,686 B2). The Examiner maintains these rejections from an earlier Office Action on the grounds that the functional limitations within the apparatus claims are given no weight. This finding is improper as it runs against procedures established under 2173.05(g) of the MPEP and against case law. The relevant section of the MPEP is cited below:

> **2173.05(g)Functional Limitations [R-3]**
> A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not,

in and of itself, render a claim improper. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step. >In *Innova/Pure Water Inc. v. Safari Water Filtration Sys. Inc.*, 381 F.3d 1111, 1117-20, 72 USPQ2d 1001, 1006-08 (Fed. Cir. 2004), the court noted that the claim term "operatively connected" is "a general descriptive claim term frequently used in patent drafting to reflect a functional relationship between claimed components," that is, the term "means the claimed components must be connected in a way to perform a designated function." "In the absence of modifiers, general descriptive terms are typically construed as having their full meaning." *Id.* at 1118, 72 USPQ2d at 1006. In the patent claim at issue, "subject to any clear and unmistakable disavowal of claim scope, the term 'operatively connected' takes the full breath of its ordinary meaning, i.e., 'said tube [is] operatively connected to said cap' when the tube and cap are arranged in a manner capable of performing the function of filtering." *Id.* at 1120, 72 USPQ2d at 1008.<

Claim 9—and by extension dependent claims 10, 13, and 15-18— include the limitations of:

- a setting unit for presetting a threshold region, wherein the threshold region includes at least one pair of upper and lower limits; and
- a judging unit for judging whether or not the target pixel is a defective pixel by comparing the raw datum of the target pixel with the threshold region and marking the pixel as defective if within the threshold range.

Functional limitations within the apparatus claims are to be construed as having their full meaning. Kuwabara, by the Examiner's own admission, does not implicate a threshold range and thus cannot teach the use of a setting unit or judging unit with the characteristics cited in the apparatus claims. Furthermore, it would not be a simple matter to combine the Tanaka reference to rejection the apparatus claims because, and as further described below, Tanaka does not act to mark a pixel as defective if within the threshold range.

Reconsideration and allowance of the claims as amended is thus respectfully requested.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 2, 5-10, 13-21 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara (U.S. Patent No. 6,980,686 B2) in view of Tanaka et al. (U.S. Patent No. 7,116,816 B2).

The Examiner agrees that Kuwabara does not teach elements of claim 1, including:

- A threshold region including at least one pair of upper and lower limits;

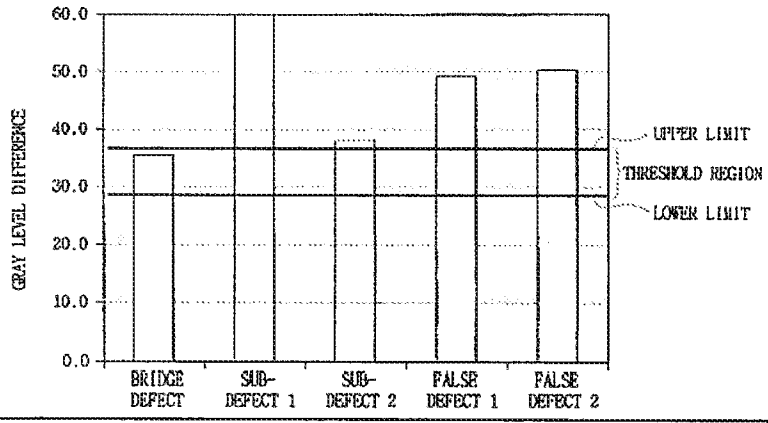
- Comparing the threshold region with the raw datum; and
- Marking the target pixel as defective if the raw datum is within the threshold region.

The Examiner has found a new reference, U.S. Patent No. 7,116,816 (Tanaka), that purports to teach these limitations. The Examiner thus finds that a combination of Kuwabara with Tanaka teaches all elements of the claims.

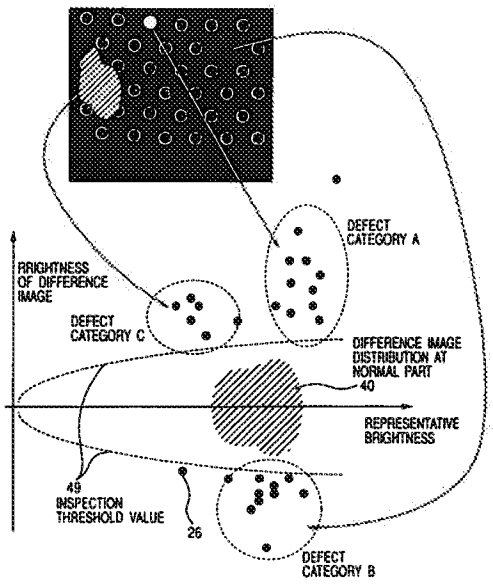
Applicant traverses on the grounds that Tanaka does not mark a target pixel as defective if the raw datum is within the threshold. Instead, Tanaka marks the target pixel as defective if the raw datum is outside the threshold region. Tanaka's method is effectively identical to the conventional procedure whereby the object is marked as defective if the absolute value of the brightness difference is above a threshold.

The figures below illustrate the difference between the invention (LEFT) and Tanaka (RIGHT). In the invention, the threshold region is between two values; in Tanaka, the threshold region for defects is outside of two values plotted as a threshold curve mirrored about a zero value.

FIG. 20



Application, FIG. 9
Threshold region denotes range between two values



In Tanaka, the "region" would be the area defined within the threshold curve (49). The objects labeled within this region are the normal parts (40); the defects A, B, and C fall outside of this region. In this way, Tanaka actually teaches the opposite of the current invention.

The Example shown in FIG. 10 of the application (*see also*, specification, page 10, lines 18-34) illustrates why the teaching of Tanaka is not helpful to that of the current invention. In FIG. 10, two types of defects are illustrated: (1) a killer defect of the S-poly patterning process having a gray level difference of between about 20 and 60, and (2) a non-killer striation defect having a gray level difference range of between -20 and -60. As the absolute values of both (1) and (2) defects are the same, and as Tanaka's threshold curve (49) is symmetric about the X-axis, then both (1) and (2) are detected outside of the curve. Under the current invention, in contrast, only the killer defect would be detected.

Claims 3, 4, 11, 12, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara (U.S. Patent No. 6,980,686 B2) in view of Spaeth (U.S. Patent No. 2,349,012).

This rejection is improper on the grounds that not all elements of the claims are shown by the cited art. Claims 3, 4, 11, 12, 22 and 23 cite to either base claim 1 or 19 which call for use of a "threshold region." Neither Kuwabara nor Spaeth teach the use of a threshold region. Removal of the rejection is respectfully requested.

Claims 3, 4, 11, 12, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara (U.S. Patent No. 6,980,686 B2) in view of Tanaka et al. (U.S. Patent No. 7,116,816 B2) as applied to claim 1 above, further in view of Spaeth (U.S. Patent No. 2,349,012).

The newly cited Tanaka reference does not teach the concept of marking pixels as defective if "within" the region (claims 3, 4, 11, and 12) or where the threshold region does not include a zero value (claims 22 and 23). Removal of the rejection is respectfully requested.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara (U.S. Patent No. 6,980,686 B2) in view of Lin et al. (US Patent No. 6,091,846).

This rejection is improper on the grounds that not all elements of the claims are shown by the cited art. Claim 14 cites to base claim 1 which call for use of a "threshold region." Neither Kuwabara nor Lin teach the use of a threshold region. Removal of the rejection is respectfully requested.

For the foregoing reasons, reconsideration and allowance of claims 1-27 of the application as amended is requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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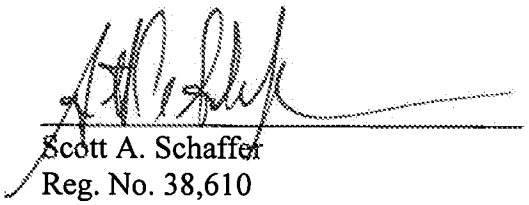

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